

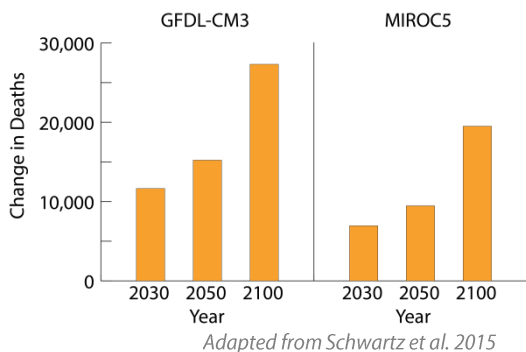
# NIHHIS: NATIONAL INTEGRATED HEAT HEALTH INFORMATION SYSTEM

Helping decision makers plan and prepare for extreme heat events—days, months, and years in advance

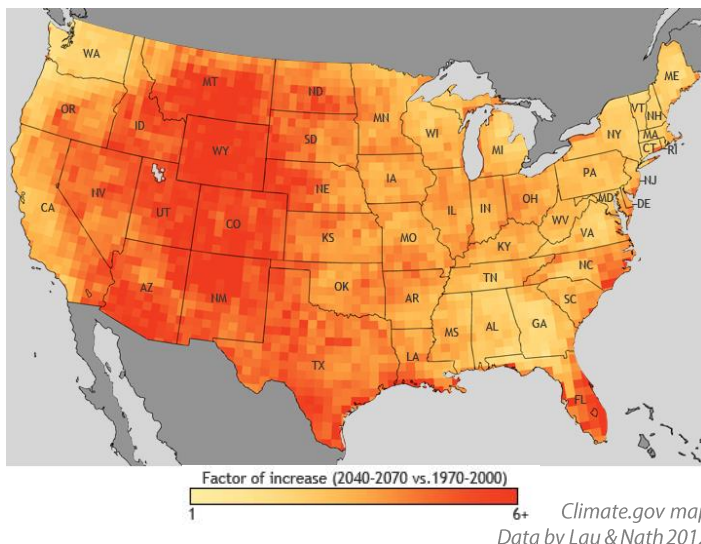
In the United States, extreme heat causes more deaths per year than those caused by floods, lightning, tornadoes, hurricanes, or cold weather events. Many people are at greater risk due to increased vulnerability and exposure to heat. Heat illness and death are more common in persons over 65 or under the age of four. Death may be an ultimate consequence of extreme heat, but it also can cause heat exhaustion and stroke, organ damage, and injuries. Groups such as outdoor workers, athletes, emergency responders, and those living with medical conditions are also at risk.

Extreme heat events have been increasingly frequent in the past decade, and the trend is predicted to continue. In 2011, the United States had its hottest heat wave in 75 years. In a short three-day period in summer 2013, 46 high-temperature records were matched or broken in the Southwest. The latest U.S. National Climate Assessment, released in 2014, concluded that similar extreme heat events will be more frequent, more intense, and longer in the future.

## Projected changes in deaths in U.S. during hot months (Apr. – Sept.) based on two models



## Increase in total heatwave days per summer in the mid-21st century compared to the end of the 20th century



NOAA is building a robust National Integrated Heat Health Information System (NIHHIS) to address the increase of heat extremes now and into the future. NOAA's Climate Program Office leads NIHHIS in partnership with the Centers for Disease Control (CDC) to improve understanding and impact of extreme heat events across various time scales, build capacity across climate and public health communities, and develop timely and accessible communication tools to inform preparedness and adaptation.

NIHHIS partners include ten federal agencies with different missions, core competencies, and responsibilities. This diversity of expertise allows to identify and harmonize existing capabilities and protect Americans from health-related risks. NOAA works to enhance current heat forecasts based on user need and epidemiological requirements to extend heat projections from weeks to months and beyond. NOAA and the CDC work to support improved understanding of the role of climate on extreme heat and enhance operational efforts.

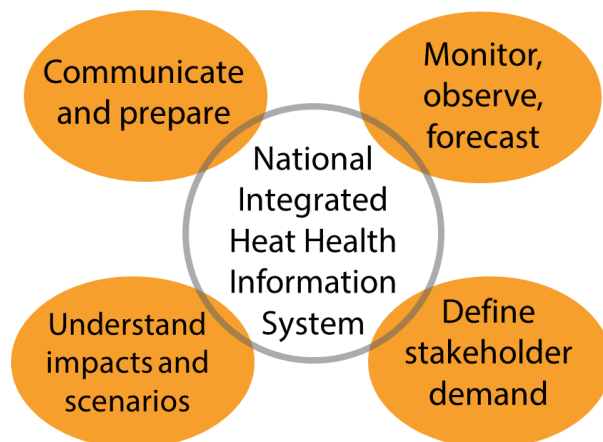
Updated: June 2017

Learn more: [Climate.gov/NIHHIS](https://climate.gov/nihhis)

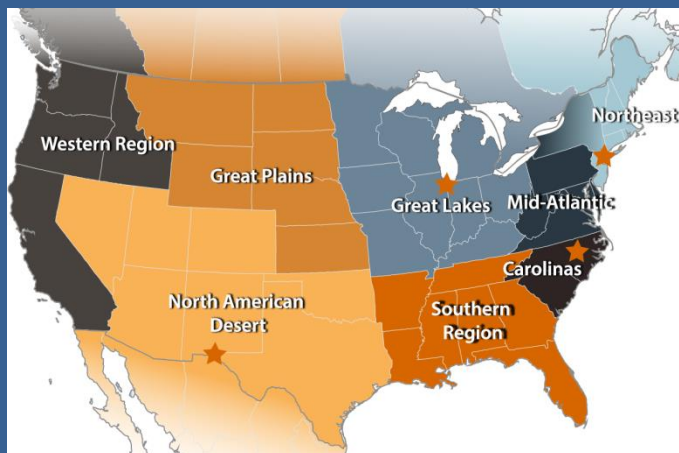
# BUILDING A NATIONAL HEAT HEALTH INTEGRATED INFORMATION SYSTEM

Through improved extreme heat forecasts with longer lead times, strengthened public health engagement, and better communications networks at national and local scales, NIHHS can save lives and reduce health-related illness.

NIHHS strives to define stakeholder demand in local areas in a way that can be compared and contrasted across the country. Impacts and scenarios assessments are used to better define demand and elicit requirements. These needs are translated into research gaps for the climate and health communities and are used to refine and plan observing systems, research, and information products. Finally, these improvements are used to co-develop heat-health adaptation and intervention methods.



## NIHHIS PILOTS AND NETWORK IN THE UNITED STATES



NIHHIS pilots shown with stars in the map on the left facilitate shared learning and consistent approaches to managing heat extremes. Also shown in the map, NIHHS regions are shaped by various geographical, climatological, and societal characteristics.

Heat and its health impacts vary by location based on the length or frequency of heat waves, local climate norms, population characteristics, and local heat preparedness plans. However, many of these conditions are also shared across locales. All locales contain a subset of the groups vulnerable to extreme heat and the decision makers who protect them. Thus, adaptation methods and interventions can also be shared where conditions are similar and modified where they differ.

The NIHHS Rio Grande/Bravo pilot in the North American Desert region provided information for the 2017 heat season in Las Cruces, New Mexico, El Paso, Texas, and Ciudad Juarez, Mexico. This pilot actively works to survey the Rio Grande/Bravo region to understand local nuances of heat vulnerability. The pilot in the Northeast is planning local workshops in Boston and New York to understand how to target research investments in climate and health and will ultimately improve the provision of climate services in the region. In the Carolinas, a pilot largely driven by the CPO-supported Regional Integrated Science and Assessments program is testing a heat health vulnerability tool used to predict hospital patient load during heat events as well as other tools available in its Convergence web platform. A case study of their work is currently under preparation.